

*REMARKS*

Reconsideration of the pending application is respectfully requested in view of the foregoing amendments and the following remarks.

*Status of the Application*

Claims 1-10 are currently pending. No amendments are presented in this response.

*Summary of the Office Action*

The Office Action opens by rejecting claims 1-10 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent 6,238,838 to Gaschler et al. ("the '838 patent").

Claims 1-10 are further rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent 6,492,093 to Gaschler et al. ("the '093 patent").

*Discussion*

The Office Action asserts that the '838 patent discloses the claimed heat-sensitive lithographic printing plate precursor including *inter alia* the infrared dye as claimed, with the exception that

Gaschler does not specifically teach three to five sulfo, hydroxyl and carboxyl groups as R<sup>1</sup>, R<sup>2</sup>, R<sup>4</sup> and R<sup>5</sup> as claimed. However, it would have been obvious to one of ordinary skill in the art to substitute the solubilizing groups to form a more soluble infrared absorbing dye because Gaschler teaches in his compound, the substituents R<sup>1</sup>-R<sup>8</sup> may include 2-4 sulfonate, carboxylate or phosphonate groups. All of these groups represent G<sup>1</sup>. Therefore it has been contemplated by the reference to use 3 or more solubilizing groups (see col. 2, lines 57-60 and claims 1 and 14 in Gaschler)."

*See Office Action, pages 2-3.*

At the outset, Applicants respectfully disagree with the assertion that the '838 patent discloses the infrared dye as claimed. Initially, Applicants note that the '838 patent fails to disclose the claimed compound in which "Z<sup>3</sup> represents two or three non-metallic atoms, which may be substituted, necessary to complete a 5- or 6-membered heterocyclic or carbocyclic ring." The only compound taught by the '838 patent having an arguably similar structure is F5, which the patent states is disclosed solely for "comparison purposes", *i.e.*, in comparison to F1-F4 which are "particularly suitable" examples of the '838 patented subject

matter. F5, in contrast, does not have any “sulfonate, carboxylate or phosphonate” groups attached thereto, nor the “Z<sup>3</sup>” structure as required by the claims. Indeed, there is nothing in the ‘838 patent that would motivate one skilled in the art to modify F5, a “comparative” compound; indeed, the only compounds taught to be modified with 2 to 4 “sulfonate, carboxylate and/or phosphonate groups” are those that fit Formula I (*see col. 2, lines 58-60*). Thus, any reliance on F5 falls far short of establishing a prima facie case of obviousness, as there is no teaching or suggestion that would motivate one skilled in the art to modify this compound in a manner that would assist in providing the claimed subject matter. To the extent any relevant teaching is provided, one skilled in the art would be taught to exclude a 5- or 6-membered heterocyclic or carboxylic ring structure intermediate the bicyclic ring structures of the infrared dyes disclosed therein, *i.e.*, to exclude a structure that is required by the subject matter claimed in the pending application.

Moreover, Applicants submit herewith a Declaration under 37 CFR § 1.132 by Dr. Stefaan Lingier (an employee of assignee). As set forth at ¶ 4 of the declaration, based on his experiments and in his opinion, printing plate precursors comprising an infrared dye having 3 or 4 solubilizing groups as described in the pending application exhibit high infrared-sensitivity and a small  $D_{\min}$ -value, resulting in no stain during printing and that, when the infrared dye comprises at most 2 or at least 6 solubilizing groups, the printing plate precursors do not provide this combined advantage of high speed and low stain.

The experiments set forth in the declaration support the surprising and unexpected results obtained when the claimed subject matter is used, *e.g.*, when the precursor includes an infrared dye having 3 to 5 solubilizing groups as described in the claims. More specifically, Comparative Examples 1 and 2 which use infrared dyes having no or 2 solubilizing groups, respectively, provide relatively low stain but not relatively high speed. Comparative Example 8 which uses an infrared dye having 6 solubilizing groups provides insufficient clean-out, resulting in the observation of stain during printing. In contrast, and surprisingly, the precursors of the claimed invention represented by Invention Examples 3 to 6 which use an infrared dye having 3 or 4 solubilizing groups exhibit high speed (*e.g.*, energy density about  $\leq 100 \text{ mJ/cm}^2$ ), and excellent clean-out on the exposed areas as indicated by the relatively small  $D_{\min}$  value (*e.g.*, about  $<0.03$ ), and which provides an absence of stain during printing. *See Declaration.*

For at least the foregoing reasons, Applicants respectfully submit that the obviousness rejection over the '838 patent should be withdrawn.

Turning to the rejection based on the '093 patent, the Office Action utilizes reasoning which is analogous to that used in rejecting the claims over the '838 patent. At the outset, and in regard to the general structure IV of the '093 patent, Applicants note that exemplary compounds (F1-F3) are substituted by a barbituric acid group in the meso position. As such a group is not present in the meso position of the infrared dyes used in the claimed invention (*see R<sup>1</sup> group*), Applicants submit that the '093 patent fails to suggest the invention as claimed. Applicants also disagree that the dyes of formula III disclose and teach the present invention, as their structure differs from that claimed perhaps more so than those of formula IV, and there is nothing in the '093 patent that would suggest modification of these dyes to provide the claimed precursor.

Further, and in connection with compound F4 disclosed in the '093 patent, there are no "sulfonate, carboxylate or phosphonate" groups attached to F4. Indeed, there is nothing in the '093 patent that would motivate one skilled in the art to modify F4, as it is nothing more than a "comparative" compound. Thus, any reliance on F4 falls far short of establishing a *prima facie* case of obviousness, as there is no teaching or suggestion that would motivate one skilled in the art to modify this compound in a manner that would assist in providing the claimed subject matter. To the extent any relevant teaching is provided, one skilled in the art would be taught to exclude a solubilizing group from F4.

In addition, Applicants incorporate the experimental results set forth in the Declaration under 37 CFR § 1.132 by Dr. Stefaan Lingier (an employee of assignee), and the comments concerning this declaration presented above, as if set forth herein.

For at least the foregoing reasons, Applicants respectfully submit that the obviousness rejection over the '093 patent should be withdrawn.

#### Conclusion

As Applicant believes the application is in proper condition for allowance, the examiner is respectfully requested to pass the application to issue. If, in the opinion of the

Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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